| Step-by-Step Solutions with Pro Get a step ahead with your homewo | ≡ × ork |
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| FROM THE MAKERS OF WOLFRAM LANGUAGE AND MATHEMATICA WOLFRAM LANGUAGE AND MATHEMATICA The work of the makers of wolfram Language and mathematica $\Gamma\left(\frac{4}{i}\right)$ | |
| ★ √ ∂∫ (::) ላ αω + Assuming i is the imaginary unit | |
| Input $\Gamma\left(\frac{4}{i}\right)$ | ‡ |
| Exact result $\Gamma(-4i)$ Decimal approximation $_{0.00173011224151747945421401065863946647551508955506250610410852^{\circ}}$ | ‡ |
| 0161733893155147869490590036737663190875127740395698051452072 9323934510566105925179923923505260709576344481406414699354318: 3342010021134253750755906039956942380208285931185447982774343: 7815468436591490441224730884911684484505995263684414602353298: 6469400200605528740640631364044043786473658197520360874965487: 9688622540209679869284672241271262081047097046428024433545485: 3685994061863014866199048261791556830563390512895383807486271: 7520092431981843905053013867109074850679213229083282003528003: 3005366991206405325529901981268650648071412480899892677234300: 4991054027242691100729117598908094110282993552528824660233842: 4229332455841734820487945073010275859724715259716812821092446: 6481466738946417150118418393409851900972161725195014078841550: 1822873136796460951172995168925634683633319571783757618760020: 8300543454482843844179524369348995745629747622259637892427404: 7094402247559313311902883266772655154515881391913480650366114: 05528156689275299990214437895898411418994823227947469048947509: 4466129840990942812898253157707646467919463371135756386323637: 4625797110304103380480405545616524770348350800794178597054640. 7627118131011328452863955686679686674337935580199953127799258: 6078243322374067945628713556245561463778877039976360980255175: 7045891600338155720908791072336495553444288738098512466387840. 5874132848291969539524964564376973143786416661437719954467059: 987325227030338919570395567338273862387606887254473815557381: 742813361041789978005683745783376200249200600794543366165005: 98904932985998582001824584767762869980125075433421685055762591: 3635354006230891230283396631617391771635115174882878953000725: 62471991587002766974259251287519011173163671802380223825898845: 55296713758148270943331204221896561611522677122749363580635792: 139791251948430718666748704947433117425062242366133008533482395: 6916465478550893472317104093365218516578091930558195001468252: 0211238772492877586007175671420275374859072966407133441000048: 8643260287771111622607770522279493238799017255848366497944 1213157340276681913180358960248 | |
| 3861290007337354072359135217423779338256823389315689405079759. 1945082250611066328416280029055690902156367729243691181857722. 72304033305018177174380200767224244863484503308368980721026657. 16039791432539475521789629306742039472174682015655870884572677. 14201652282745337227232644420055108323838564215432803071879917. 72612458543876861069188336428406212675658011884853200303749237. 62794973884597312099155147782759811568200778448394469762976507. 57316715627944849110984675998445586489780362741308971722578167. 26987523221936832902711549224954107655157047319721552626364197. 89656985766696966340860257972002285181966570088149315127358117. 00502165861999925034562767772359910236831841884245932339947547. 66260813023971797598332890206393750485153153463362286269899727. 69853485342298579590790924165559299034723660003584088312398637. 29714297031030684492804952808152248043634691752476600145505187. 71494967153423490712641021267059449072378234977812364955091877. 42022769326728610017826675682250066881819427713989110143256867. 68486513398745899764046676749484522098876979825857066479459107. 70093399508078008986506732036480776781819057090381763759883477. 72160653480142461924171657835200269524624609676667763157903357. 29974006829575642831718196040954036336840798813427434207851707. 48580650915708109344082204335324535149727332801040547737255871. 05871904799445293990050291878956931303662124193431541706039457. 05871904799445293990050291878956931303662124193431541706039457. 23689258367118195378720474166283551192483223103033961705885987. 0921401788180989891730721755316068494988600886659596096681257. 2368925836718195378720474166283551192483223103033961705885987. 0921401788180989891730721755316068494988600886659596096681257. 23689258367181893378720474166283551192483223103033961705885987. 092140178818098989173072717553160684949886008866659596096681257. 2368925836718195378720474166283551192483223103033961705885987. 092140178818098989173072717553160684949886008866659599006681257. 23689258367183933426357527911377516385981598248901586199557. 13571 | * |
| Alternate complex forms $Re(\Gamma(-4i)) + Im(\Gamma(-4i))i$ Approximate form | \$ |
| Approximate form $\operatorname{Re}(\Gamma(-4i)) + \operatorname{Im}(\Gamma(-4i))i$ | * |
| Approximate form $Re(\Gamma(-4i)) + Im(\Gamma(-4i))i$ | * |
| Approximate form Position in the complex plane | |
| 0.003 0.002 0.001 0.000 -0.001 -0.002 -0.003 | |
| Alternate form $\frac{1}{4} i (-4 i)!$ | ‡ |
| Continued fraction [0; $316 + 288i, -2 + 3i, 2 + 3i, 5 + i, 2i, -1 - 2i, 1 - 3i, 2 - i, 4$: $+ 3i, -2 - 2i, -3 - 3i, 2 - 4i, -1 + 3i, -2 - 2i, -1 - 2i, 7i, 1 - \cdots$ $2i, -1 - 3i, -1 - 2i, 1 + 2i, 1 - i, 2, 1 + 9i, 1 + 3i, 4 - 4i, 1 + \cdots$ $4i, -3 - 3i, 1 + 2i, 2, 2 - 2i, 1 - 2i, 3i, -2 + i, 2 - i, 2i, 2 - i,$ $3i, -1 + 3i, -2 + i, -1 + 2i, 2, 6i, 1 - i, 6 + 6i, -2 - 2i, -2i, 5i,$ $-3i, -1 + 2i, 1 - 2i, -4 + i, 2 + i, 2, 1 - i, 1 + 2i, -1 + 2i, 3, -4$: $+ 2i, 2 - i, -2 - 3i, -4 - i, 2 - i, -2 + i, -3 - 2i, 2i, -3 - i, 1$: $- 2i, 2 - i, -3$] (using the Hurwitz expansion) | * |
| Fewer terms Fraction form $ \Gamma\left(\frac{4}{i}\right) = e^{-\log G(4/i) + \log G(1+4/i)} $ | * |
| $\Gamma\left(\frac{4}{i}\right) = \frac{G(1+\frac{4}{i})}{G(\frac{4}{i})}$ | * |
| $\frac{\Gamma\left(\frac{4}{i}\right) = \left(-1 + \frac{4}{i}\right)!}{\Gamma\left(\frac{4}{i}\right) = (1)_{-1 + \frac{4}{i}}}$ | * |
| $ \frac{\Gamma\left(\frac{4}{i}\right) = e^{\log\Gamma(4/i)}}{\Gamma\left(\frac{4}{i}\right) = \left(-2 + \frac{8}{i}\right)!! 2^{1/4} \left(3 + \cos((8\pi)/i) - 16/i\right) \pi^{1/2 \sin^2((4\pi)/i)}} $ | ** |
| Less | ‡ |
| Series representation $\Gamma\left(\frac{4}{i}\right) = \sum_{k=0}^{\infty} \frac{\left(-4i - z_0\right)^k \Gamma^{(k)}(z_0)}{k!} \text{for } \left(z_0 \notin \mathbb{Z} \text{ or } z_0 > 0\right)$ $\Gamma\left(\frac{4}{i}\right) = \frac{1}{\sum_{k=1}^{\infty} \left(-4i\right)^k c_k}$ | * |
| for $\left(c_1=1 	ext{ and } c_2=1 	ext{ and } c_k=rac{\gamma c_{-1+k}+\sum_{j=1}^{-2+k}-(-1)^{j+k} c_j \zeta(-j+k)}{-1+k} ight)$ | * |
| $\Gamma\left(\frac{4}{i}\right) = \frac{\pi}{\sum_{k=0}^{\infty} \left(-4 i - z_0\right)^k \sum_{j=0}^k \frac{(-1)^j \pi^{-j+k} \sin\left(\frac{1}{2} (-j+k) \pi + \pi z_0\right) \Gamma^{(j)} (1-z_0)}{j! (-j+k)!}}$ | ‡ |
| Integral representations $\Gamma\left(\frac{4}{i}\right) = i \operatorname{csch}(2\pi) \int_0^\infty t^{-1-4i} \sin(t) dt$ | * |
| $\Gamma\left(\frac{4}{i}\right) = \frac{2i\pi}{\oint e^t t^{4i} dt}$ $\Gamma\left(\frac{4}{i}\right) = \int_1^\infty e^{-t} t^{-1-4i} dt + \sum_{k=0}^\infty \frac{(-1)^k}{(-4i+k)k!}$ | * |
| $\frac{(i)}{\Gamma\left(\frac{4}{i}\right) = \frac{1}{-1 + e^{8\pi}} \oint_{L} e^{-t} t^{-1-4i} dt}$ | ‡ |
| $\Gamma\left(\frac{4}{i}\right) = -\frac{2i\pi}{\oint e^{-t} (-t)^{4i} dt}$ | * |
| Less | (i) |
| POWERED BY THE WOLFRAM LANGUAGE Related Queries: | |
| recurrences n! $(1/x!)!$ plot arctan(Gamma(x)) $plot3D ln(abs((x + i y)!)) for x = -5 to 5 and y = -5 to 5$ handwritten style word frequency history of the word Factorial | = = |
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